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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,998	06/28/2005	Carmen Leung	100851-1P US	9023

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ASTRA ZENECA PHARMACEUTICALS LP  
GLOBAL INTELLECTUAL PROPERTY  
1800 CONCORD PIKE  
WILMINGTON, DE 19850-5437

EXAMINER

BARKER, MICHAEL P

ART UNIT	PAPER NUMBER
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1626

MAIL DATE	DELIVERY MODE
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11/30/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/540,998	Applicant(s) LEUNG ET AL.	
	Examiner Michael P. Barker	Art Unit 1626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 Sept. 07, Response to Restriction.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 15-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-10 and 15-19 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

**Claims 1-10 and 15-19** are pending and subject to a second Restriction Requirement for the reasons given below.

#### ***Response to Remarks***

In response to the Restriction Requirement sent 7 September 2007, Applicant elected Group I, **Claims 1-6, 10, 15, and 16**, *without traverse*. Applicant requested the Examiner correct the typographical error in which two Group Vs are recited. In fact, the second Group V should have been Group VI, and Group XV should have been Group VII. These groupings are moot in light of the new Restriction Requirement put forth here.

Applicant's elected Group has proven too large to search comprehensively, and the Claims are now being rerestricted.

#### ***Election/Restriction***

Restriction is required under 35 U.S.C. 121 and 372.

#### ***Lack of Unity Requirement***

A restriction is required according to the provision of PCT Rule 13.2, since **Claims 1-10 and 15-19** are drawn to more than one inventive concept (as defined by PCT Rule 13). PCT Rule 13.1 states that the international application shall relate to one invention only or to a group of inventions so linked as to form a single general inventive concept (requirement of unity of invention). Further, PCT Rule 13.2 states unity of invention referred to in Rule 13.1 shall be

fulfilled only when there is a “technical relationship” among those inventions involving one or more of the same or corresponding special technical features.

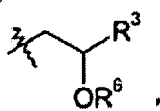
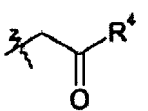
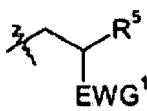
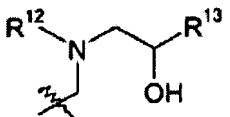
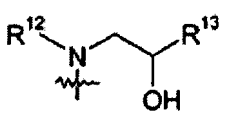
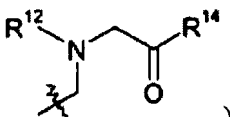
Annex B, Part 1 (b), provides that “special technical features” mean those technical features, which, as a whole, define a contribution over the prior art.

This application contains inventions not so linked as to form a single general inventive concept under PCT Rule 13.1.

The following groups are exemplary, wherein the variables are defined based upon the Examples provided in the Specification:

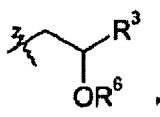
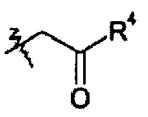
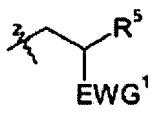
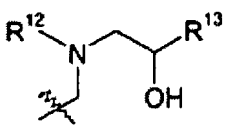
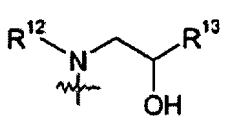
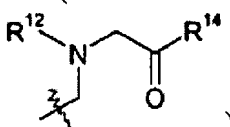
- **Group Ia: Claims 1, 7, 10, 16, and 17** ( $\text{Ar}^1$  and  $\text{Ar}^2$  are not listed in Claim 7 but do fit within the scope of this Group, when G is CH):

- $\text{Ar}^1$  is phenyl;
- $\text{Ar}^2$  is phenyl;
- n is 0;

- $\text{R}^1$  is , , and  (or in Claim 7,  $\text{R}^{11}$  is , , and ); and
- $\text{R}^2$  is hydrogen,  $\text{C}_{1-10}$  alkyl,  $\text{C}_{1-10}$  acyl, substituted  $\text{C}_{1-10}$  acyl, substituted  $\text{C}_{1-10}$  alkyl,  $\text{C}_{1-10}$  alkylene, or substituted  $\text{C}_{1-10}$  alkylene
- All other variables are as defined.

- **Group Ib: Claims 1, 7, 10, 16, and 17** ( $\text{Ar}^1$  and  $\text{Ar}^2$  are not listed in Claim 7 but do fit within the scope of this Group, when G is CH):

- $\text{Ar}^1$  is phenyl;
- $\text{Ar}^2$  is phenyl;
- n is 0;

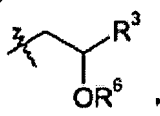
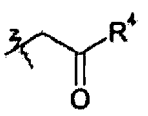
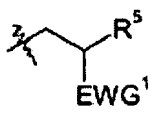
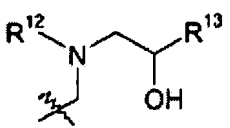
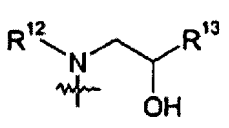
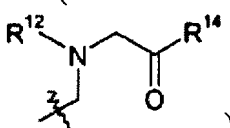
- $R^1$  is , , and  (or in Claim 7,  $R^{11}$  is , , and ); and

•  $R^2$  is  $C_{1-10}$ alkylene, wherein said alkylene is linked to a ring carbon of  $Ar^1$ ;

• All other variables are as defined.

- **Group IIa: Claims 1, 7, 10, 16, and 17** ( $Ar^1$  and  $Ar^2$  are not listed in Claim 7 but do fit within the scope of this Group, when G is N)

- $Ar^1$  is pyridine;
  - $Ar^2$  is phenyl;
  - n is 0;

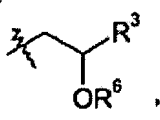
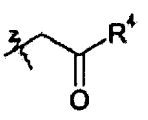
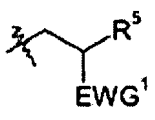
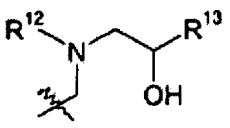
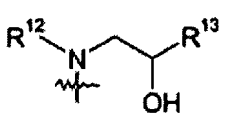
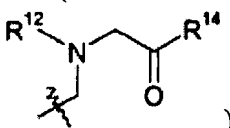
- $R^1$  is , , and  (or in Claim 7,  $R^{11}$  is , , and ); and

•  $R^2$  is hydrogen,  $C_{1-10}$  alkyl,  $C_{1-10}$ acyl, substituted  $C_{1-10}$ acyl, substituted  $C_{1-10}$ alkyl,  $C_{1-10}$ alkylene, or substituted  $C_{1-10}$ alkylene;

• All other variables are as defined.

- **Group IIb: Claims 1, 7, 10, 16, and 17** ( $Ar^1$  and  $Ar^2$  are not listed in Claim 7 but do fit within the scope of this Group, when G is N)

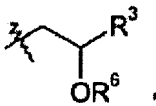
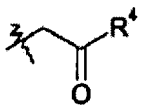
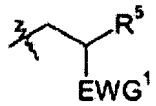
- $Ar^1$  is pyridine;
  - $Ar^2$  is phenyl;
  - n is 0;

- $R^1$  is , , and  (or in Claim 7,  $R^{11}$  is , , and ); and

- $R^2$  is  $C_{1-10}$ alkylene, wherein said alkylene is linked to a ring carbon of  $Ar^1$ ;
- All other variables are as defined.

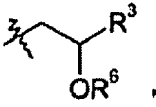
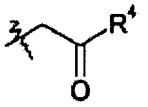
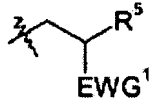
- **Group IIIa: Claims 1-6 and 10:**

- $Ar^1$  is phenyl;
- $Ar^2$  is phenyl;
- $n$  is 1;
- $X$  is  $CH_2$  or  $CH_2CH_2$ ;

- $R^1$  is , , and ;
- $R^2$  is hydrogen,  $C_{1-10}$  alkyl,  $C_{1-10}$ acyl, substituted  $C_{1-10}$ acyl, substituted  $C_{1-10}$ alkyl,  $C_{1-10}$ alkylene, or substituted  $C_{1-10}$ alkylene;
- All other variables are as defined.

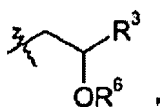
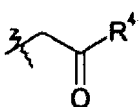
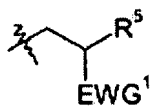
- **Group IIIb: Claims 1-6, 9, and 10 ( $Ar^1$  and  $Ar^2$  are not listed in Claim 9 but do fit within the scope of this Group, when  $G$  is CH):**

- $Ar^1$  is phenyl;
- $Ar^2$  is phenyl;
- $n$  is 1;
- $X$  is  $CH_2$  or  $CH_2CH_2$ ;

- $R^1$  is , , and ;
- $R^2$  is  $C_{1-10}$ alkylene, wherein said alkylene is linked to a ring carbon of  $Ar^1$ ;
- All other variables are as defined.

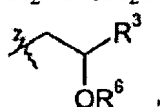
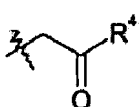
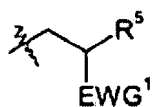
- **Group IVa: Claims 1-5 and 10:**

- $Ar^1$  is pyridine;
- $Ar^2$  is phenyl;
- $n$  is 1;
- $X$  is  $CH_2$  or  $CH_2CH_2$ ;

- $R^1$  is , , and ;
- $R^2$  is hydrogen,  $C_{1-10}$  alkyl,  $C_{1-10}$ acyl, substituted  $C_{1-10}$ acyl, substituted  $C_{1-10}$ alkyl,  $C_{1-10}$ alkylene, or substituted  $C_{1-10}$ alkylene
- All other variables are as defined.

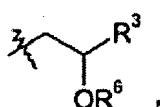
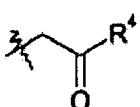
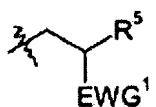
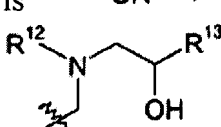
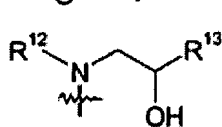
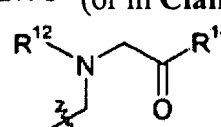
- **Group IVa: Claims 1-5, 9, and 10** ( $Ar^1$  and  $Ar^2$  are not listed in Claim 9 but do fit within the scope of this Group, when G is N):

- $Ar^1$  is pyridine;
- $Ar^2$  is phenyl;
- n is 1;
- X is  $CH_2$  or  $CH_2CH_2$ ;

- $R^1$  is , , and ;
- $R^2$  is  $C_{1-10}$ alkylene, wherein said alkylene is linked to a ring carbon of  $Ar^1$ ;
- All other variables are as defined.

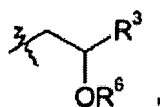
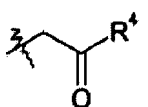
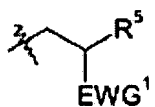
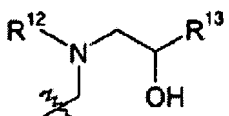
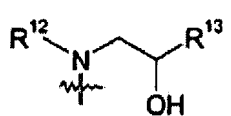
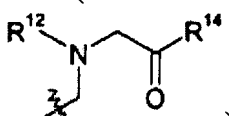
- **Group Va: Claims 1-4, 8, and 10:**

- $Ar^1$  is phenyl (G is CH in Claim 8);
- $Ar^2$  is thiophene;
- n is 0

- $R^1$  is , , and  (or in Claim 8,  $R^{11}$  is , , and ); and
- $R^2$  is hydrogen,  $C_{1-10}$  alkyl,  $C_{1-10}$ acyl, substituted  $C_{1-10}$ acyl, substituted  $C_{1-10}$ alkyl,  $C_{1-10}$ alkylene, or substituted  $C_{1-10}$ alkylene;
- All other variables are as defined.

- **Group Vb: Claims 1-4, 8, and 10:**

- $\text{Ar}^1$  is pyridine (G is N in Claim 8);
- $\text{Ar}^2$  is thiophene;
- n is 0

- $\text{R}^1$  is , , and  (or in Claim 8,  $\text{R}^{11}$  is , , and ); and
- $\text{R}^2$  is hydrogen,  $\text{C}_{1-10}$  alkyl,  $\text{C}_{1-10}$  acyl, substituted  $\text{C}_{1-10}$  acyl, substituted  $\text{C}_{1-10}$  alkyl,  $\text{C}_{1-10}$  alkylene, or substituted  $\text{C}_{1-10}$  alkylene;
- All other variables are as defined.

- **Group VI: Claim 18**

- **Group VII: Claim 19**

In accordance with 37 CFR 1.499, Applicant is required, in reply to this action, to elect a single invention to which these claims must be restricted. This listing of Groups is not exhaustive, as it would be impossible to produce such a list under the time constraints due to the large volume of subject matter claimed in this application.

There is no structural moiety common throughout **Claims 1-10 and 15-19**. Therefore, there is also no special technical feature. Each Group listed is drawn to a different generic structure, none of which anticipate or render the other Groups obvious.

**Claims 1-10 and 15-19**, then, are not so linked as to form a single general inventive concept, and there is a lack of unity of invention. The variables vary extensively and when taken as a whole result in vastly different compounds. Additionally, the vastness and complications of



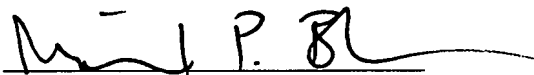
the claimed subject matter impose a serious burden on any examination of the claimed subject matter.

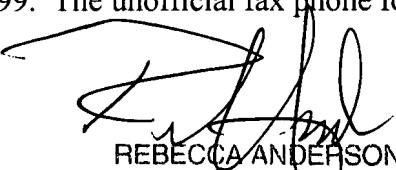
Because the claims do not relate to a single general inventive concept under PCT Rule 13.1 and lack the same or corresponding special technical features, the claims lack unity of invention and should be limited to a product, a process for the manufacture of said product, or a method of use.

After making an election, Applicant is reminded to withdraw all of the nonelected subject matter. Indication of the withdrawal in the Claims should reflect the proper status identifiers.

*Telephone Inquiry*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Barker whose telephone number is (571) 272-4341. The examiner can normally be reached on Monday-Friday 8:00 AM- 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Joseph K. McKane, can be reached at (571) 272-0699. The unofficial fax phone for this group are (571) 273-8300.

  
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